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Economic Commission for Europe

Inland Transport Committee

Global Forum for Road Traffic Safety

Eightieth session

Geneva, 9-13 March 2020

Item 3 (c) (i) of the provisional agenda

Convention on Road Traffic (1968):

Automated driving

Vehicles with automated driving systems: The concept of activities other than driving

Submitted by Germany and Chair of GRE Task Force on “Automated Vehicle Signalling Requirements (AVSR)”

This document, submitted by Germany and Chair of GRE Task Force on “Automated Vehicle Signalling Requirements (AVSR)”, requests WP.1 to inform GRE WP.29 if there is a safety requirement for automated vehicles to indicate their status and to communicate intended actions. If so, should this signal be visual, audible, or both? WP.1 will be invited to discuss this document.

ECE/TRANS/WP.1/2017/1/Rev.1

GRE discussed at the Eightieth session in Geneva on 23-26 October 2018 to pursue considering the signalling requirements for Autonomous or Automated Vehicles, and came to a conclusion that a task force (TF) would be most appropriate for this purpose. The expert from Germany, who was leading TF SR, also agreed to take the lead in the new TF. The experts from UK, GTB and OICA expressed their support to TF. GRE agreed that TF should evaluate and report on the safety needs for AVs to signal their status and communicate their next intended actions using visual or audible signals or a combination of both.

The task of the Task force is given by the following questions:

1. Is there a safety requirement for AV's to provide signals to indicate their status and to communicate their next intended actions?
2. If so, shall such signals
 - be visual,
 - audible,
 - or a combination of both?

The Task force discussed the question 1 and came to the conclusion that the decision about this principal question is not in the mandate of this task force. The following discussion based on the assumption, that a "driving mode indicator" is needed.

As a consequence of the discussion about the second question the group concluded, that it should be a visible function (under normal traffic conditions and active autonomous driving). For the visible function it must be defined, when and under which conditions this signal should be activated. In this context, e. g. interaction with police, the interaction with other road users shall be taken into account, depending from the level of autonomous driving. This does not exclude in further discussions that audible signals, which could support e.g. handicapped peoples in communicative scenarios, may be taken into account.

This outcome was addressed to GRE with the question whether WP.29 could support the view of the task force and to ask for further guidance to continue the work. Therefore a common understanding with WP.1 is needed.

The Global Forum for Road Traffic Safety (WP.1) of the United Nations Economic Commission for Europe provides complementary recommendations supporting the road safety principles of the 1949 Convention on Road Traffic, and the 1968 Convention on Road Traffic in their Resolution on the Deployment of Highly and Fully Automated Vehicles in Road Traffic.

Under Item IV. "Recommendations for automated driving systems in highly and fully automated vehicles", it is suggested in No. 4 that

- "4. Automated driving systems in highly and fully automated vehicles should:
- (h) Communicate with their users and other road users, in a clear, effective and consistent way, by providing sufficient information about their status and intention, and enabling an appropriate interaction;"

In this context we kindly ask WP.1, whether WP.1 can share our view by

taking into account the results of the GRE TF "Autonomous Vehicle Signalling Requirements" and

the Resolution on the Deployment of Highly and Fully Automated Vehicles in Road Traffic (WP.1)

that the recommended communication under Item IV should be a visible function (in highly and fully automated vehicles)

Justification:

The informal paper is submitted for a common understanding between WP.1, GRE, GRVA and WP.29, so that the Task Force could continue to work on this item.